

### **ABSTRACT**

The present invention is directed to methods for detecting the presence of genetic polymorphisms that correlate with altered gene expression. More specifically, the present invention is directed to methods for detecting the genetic polymorphisms located in the UGT1A1 promoter. The invention also provides methods for optimizing drug dosages based upon the presence of the polymorphisms. The invention further provides methods of predicting sensitivity to xenobiotics and diagnostic kits for detecting genetic polymorphisms.